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TRANSDISCIPLINARY EPISTEMOLOGY: ASSUMPTIONS AND CATEGORIES

Juarez Francisco da Silva

PhD in Education, Master in Organizations and Development, Master in Theology, Psychopedagogue, Psychologist, Professor, Member of CETRANS-Center for Transdisciplinary Education, Director at TOTEM Talentos, Mediator at Instituto Morada das Tradições www.moradadastradicoes.com.br

Paulo Sergio Orti

Master in Knowledge Management, Administrator, Psychologist, Professor specializing in business planning and strategies, Director at TOTEM Talentos, Member of Instituto Morada das Tradições www.moradadastradicoes.com.br

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Abstract: What is presented here is the result of a theoretical research with a literature review, which made possible the construction of transdisciplinary epistemological categories. These categories allow, as a dialogic process, to methodologically guide the production of research, help in the training of professionals who choose this approach, generate possibilities to produce work in a corporate and especially educational environment. The research was based on the assumptions of the theory of transdisciplinary knowledge, aligning with the perspective of scientific knowledge production and hermeneutic phenomenology to build an interpretation of possible categories. As a result, the research demonstrates that the researcher absorbed by transdisciplinary epistemology, engages in a process of rebuilding himself as an active subject in self-development as a priority, as well as in the construction of citizenship and social responsibility in what he speaks, writes, listens and produces.

Keywords: Self-knowledge; Complexity; Hermeneutics; Speech; Text.

INTRODUCTION

Since the beginning of the philosophical reflections of the ancient Greeks, the systematization of thought emerged as a proposal to organize and contribute to human development. Whether in the relationship with oneself or in the relationship with others, universal history demonstrates that ignorance or lack of knowledge can generate crises, conflicts and wars.

Currently, alternatives for the world are still being clarified, because while some defend concepts rooted in scientific values, others press for a return to traditional metaphysical, religious, cultural almost always in the exercise of rejecting what is different. Some conflicts happen between people who defend something they don't know how to articulate

with what they don't know and, in self-defense, they sustain a dimension of reality and kidnap for themselves the power of true saying. Maybe that's why science is structured in areas with epistemologies to account for the different ways of knowing things.

Human experiences historically mobilize complaints that seem the same and similar goals, according to Jung (1987), so much so that sometimes the purposes of life are so similar that one individual wants to acquire the same as the other, thus generating conflicts for the conquest of the same object.

What is observed is that the differences are natural and, if well used, contribute to some cause or function, like a tree to grow needs different elements such as water, sun, earth and the wind when it blows can knock down and also contribute, so that the roots extend even further underground in an exercise of firmness.

Philosophy is constituted as the tradition or school that teaches about systematized thinking, how to organize such a dynamic structure in order to know something; think properly as a script about something; make an intentional journey through the organized and dialogical dynamics of thought, aiming to discover and know something. It is on this carpet that all sciences based on systematized thinking walk, on an organization level capable of offering models or protocols for knowing a certain object. Science is like a base structure for a system of thinking about certain things and that is available to knowledge, open to receive new coherent updates, so it has categories, research methods and phenomena analysis,

According to the science of psychology, for Silva (2015), the human being builds himself every day and knows more about the world beyond himself, however, what was created reaches a point of observation and requires that the creator himself know more about

himself same. It's like a recursive process in which the work created wants to grow and expand, but it also depends on the growth of who created it so that both become what they really envision. The more you walk, the more your vision expands and the greater your commitment to what lies ahead.

The term transdisciplinary historically dates from the 1970s, during a congress on interdisciplinarity when Jean Piaget stated that the complexity of that stage should be followed by a consequent transdisciplinary phase. Since then, attempts have been made to characterize and constitute scientific foundations for a transdisciplinary epistemology. The prefix *trans* refers to what is between, through and beyond the disciplines, which is why this research is justified as a need to build the guiding categories of an epistemology that supports a way of doing research with consistency, containing all recognizably scientific stages.

What is presented here is the result of a theoretical research with literature review, which made it possible to build categories for a transdisciplinary epistemology. These categories allow, as a dialogical process, to guide a sequential and organized path so that the researcher constructs and reconstructs himself concomitantly as a subject of his own research. The results can help the researcher in their personal, professional and social training and support possibilities to build relevant improvements in work in a corporate and educational environment.

Transdisciplinary epistemology is a way of knowing things in life, which is why it has categories such as stages of a journey to know something, a sequence capable of revealing the essence of the things one wants to know. The categories form a set of elements that guide the line of thought that characterizes a type of research, fundamental for the analysis of each stage and the final results.

They form a system of rules that, according to Abbagnano (1998), serve for research or for its linguistic expression in any field. It is a model that has all the characteristics that scientific systematization requires to be relevant, therefore, the constitution of transdisciplinary knowledge production will be presented below; the transdisciplinary method suggested to investigate something; research techniques; categories of transdisciplinary research as the most relevant result and objective of this research.

THE PRODUCTION OF TRANSDISCIPLINARY KNOWLEDGE

The production of knowledge generically results from an interaction between the object and consciousness, mediated by systematized thinking according to Japiassu (1979), so that reality is appropriated by the subject as an abstraction. The totality of this mixed production is presented as a phenomenon, as the thing itself, and what is sought is its essence, its movement, contradictions and complexity. The phenomenon also presents the conception of reality as a synthesis of multiple units of multiplicity. Reality, therefore, is conceived from the causal and conditioning relationships between the object, the subject and the entire structure that surrounds the scenario objectively and subjectively.

The production of transdisciplinary knowledge is constituted and characterized by the description and analysis of the following categories:

a) *Conception of knowledge*– In transdisciplinary epistemology, knowledge is constructed or conceived in a relationship between the subject and the object, without any priority and fully mediated by the quality of the level of consciousness.

b) *perception of reality*– The immediate

perception of reality is shown in the partiality of the phenomenon that appears first, then its totality is mixed with several possible relationships that can be identified.

c) *the social reality*– Social reality conceives a synthesis of multiple determinations, it is the unit of multiplicity or a fragment of the complex that is envisioned. The verified reality is conceived from the relations between the objective and subjective structures. The human being is considered from the point of view of history, relationships in the world and the material mode of production of the respective existence and of the species.

RESEARCH METHOD IN THE CONSTRUCTION OF TRANSDISCIPLINARY KNOWLEDGE

The investigation methods are characterized by methods of production and analysis, which according to Castañón (2007) and Bachelard (1996) are formed by the dialogue between what is objectively real with what is thought of this reality, and this runs through reflective thinking and systematized. The objective of the method starts from the most dense and concrete scope, to elaborate increasingly subtle abstractions until arriving at the simplest categories, to then elaborate the complex relationships.

In the relationship between thought and reality, the object is the starting point that then returns to thought as a concretized reality. In the relationship between essence and appearance of phenomena, it is considered that the content corresponds to the essence and the form corresponds to the appearance, but both belong to the same reality and one does not exist without the other, with the differences.

With regard to subject and object, subject and matter differ, but they have an interpellation between both and the conscience is the reference for the reflections.

The world of these representations of disputes and conquests are illusions that support ways of thinking. Indeed, life does not need empty opinion, as Foucault (2006) states, but to renew itself without disturbance, as a process of knowledge in which nothing is refused. If nothing needs to be rejected, perhaps what is needed is to know how to take advantage of what life offers for the construction of the effective and effective subject in what constitutes him by himself.

The research method in the construction of transdisciplinary knowledge that is being proposed here is constituted and characterized by the description and analysis of the following categories:

a) *Production method and analysis*– In transdisciplinary epistemology, the method of production and analysis is structured by the dialogue between the subject and the object in a single context, characterized by reflective thinking at the level of consciousness at the time.

b) *Purpose of the method*– The objective is for the subject to start his research journey with effort according to the circumstance, to elaborate increasingly subtle abstractions until reaching the simplest characteristics, until elaborating the complex relationships. Dedicate yourself to the topic with interest, investigate the experience, reflect, write, be faithful as a subject and consider the observed whole.

c) *Relationship between thought and reality*– In transdisciplinary epistemology, thought is the starting point that thinks about the object, but then turns to itself with what it thought about the observed object, constituting the dialogic reality.

d) *Relationship between essence and appearance of phenomena*– The apparent content corresponds to the essence, the form corresponds to the appearance and both belong to the complex phenomenon in which one does not exist without the other, but have differences in essence.

e) *Relationship between subject and object*– The relationship between subject and observed object are different, but they have an intrinsic relationship between them that is conditioned by the consciousness that offers and mediates the level of reflections.

f) *Relationship between objectivity and subjectivity*– The observed reality is appropriated by the subjectivity of thought, to be criticized as a phenomenon or confronted with data from the level of consciousness of a reality at the moment of analysis.

TRANSDISCIPLINARY RESEARCH TECHNIQUES

It is necessary to consider that the main types of study can be from several areas and in many ways, so it is necessary to identify what are the main techniques for collecting, processing and analyzing data.

Empirically, what is observed is also objectified by the observer based on ontological, epistemological, methodological and theoretical constructs.

It seems certain that the attentive observer must remain faithful to what he researches, observing himself in the inherent and consequent construction of his own status as a human being. The references he had of himself undergo changes and generate new constructs when he establishes relationships with the object.

Transdisciplinary research techniques consist of the following elements:

a) *Main types of study*– It can be historical; socio-historical; critical studies; studies that incorporate science, philosophy, political practice; ethnographic, phenomenological, sociological, archaeological, genealogical, hermeneutic and other studies.

b) *Main data collection, treatment and analysis techniques*– They can be documents, testimonials and observation. Data analysis can be interpretive, qualitative, quantitative or all.

c) *Empirical field demarcation criteria*– The empirical level is related to the observed reality that is objectified from ontological, epistemological, methodological and theoretical constructs in the field of dialogic relations.

In the field of epistemological domain studies, the constitutive elements that make up the different areas are similar, but keep particular elements in the way of knowing the research object. For a theory of knowledge to be accessible or recognized, it must show itself in all these dimensions of the epistemological categories, as these are able to guide the researcher's thinking in their respective actions and with objectivity.

Notably, the argument presented here is the result of pertinent reflections that do not end, but which constitute a moment of perception of a reality of knowledge or support of a learning process in constant construction.

TRANSDISCIPLINARY RESEARCH CATEGORIES

The categories defined in a research, for Foucault (2006), approach and lead the subject and also the reader, to know the object with which he relates and here it is transdisciplinary research.

To build systematized knowledge about

what exists, Aristotle (1985, p. 47) suggested that the researcher be guided by the investigation of classes or categories in relation to the observed object, trying to locate them and appropriate them. The word category of Greek origin: *categoriai*; *kategoría*,-as, means the classification of ideas into genera, species, etc.

In building the categories of transdisciplinary epistemology and trying to get to the essence of the phenomenon, as suggested by Ricoeur (2013), the production of knowledge was carried out according to what hermeneutics calls distancing, at the core of the experience, based on five themes such as criteria of textuality that are called categories of hermeneutic phenomenology. They are: a) The realization of language as discourse; b) Discourse as a work; c) The relationship between speech and writing; d) The world of the text; e) Understand yourself in front of the work.

The supposed distance for Ricoeur (2005), promotes the simplification of the relationship between the observed object and the observer, in a game of reciprocity that assumes the idea that subjectivity does not exist without objectivity. This reflexivity emphasizes the observer's self-development, because to know oneself it is also necessary to relate to know the world. Following the interpretation criteria guided by hermeneutic phenomenology, the categories of transdisciplinary epistemology were produced as a proposal that serves as a reference for the researcher. Transdisciplinary epistemology offers the researcher the opportunity to know and reveal himself more, based on the assumption that his research is directed towards knowing something outside himself. In these search categories,

As a result of the investigation developed and basically described here, we will present below the categories of interpretation constructed for a transdisciplinary epistemology:

1 - Integrative Language Category

Transdisciplinary epistemology incites discourse, in which the language recognizes differences in the same phenomenon and does not purposely separate them, by promoting in the author and reader the integrative reactions of the idea developed in the discourse, mobilizing both in particular aspects. The phenomenon arises from a combination of similar and close aspects, as well as distant and different ones, as the author mobilizes in order to recognize or reveal to himself what he builds as an idea, brings together elements that arise from distant or close linguistic matrices. and some different ones. In the construction of the idea, a new and different meaning arises from the same previous point of view, that is, the author is no longer the same person who started the construction of the presented idea. After making contact with the reflection of the other, the reader integrates this experience into himself, mobilizes reflections that promote knowledge about himself and about the world that is evident in reading or listening to the other. The author of language recognizes himself in what particularizes him: his nature, what he knows about himself.

Summary: The world of ideas and thought; how ideas that produce new perceptions are related.

2 - Transdisciplinary Recursive Discourse Category

The transdisciplinary recursive discourse shows itself as a work in constant organization, maintaining the systematization of ideas formed by units that collaborate and interact with each other in a connection of objectives, which cross the units of ideas themselves. The speech is concerned with presenting situations and through reflection improves the way of recognizing the event that happened. The author of the speech recognizes the complex relationship in the world, envisions possibilities external to himself and in the

dialogic phenomenon. The discourse reflects the human spirit that opens up to the world whether through curiosity, need, exploration, passion for knowledge, assuming for itself the consequences and responsibilities of belonging to the world.

This category is the result of the relationship that is established between the written text, the discourse and the reading, producing an autonomy in the interpretation not with a meaning that reduces, but as an observation of the intentional horizon of the author and the reader or listener. The meaning takes different directions, as it can be reconstituted and generate a new situation or a new dialogue in each one. It starts from a state in which it recognizes itself as well as what is external to its existence, and from this process it collects or absorbs the result of this internal relationship with the external, as a recursive and constant phenomenon.

Summary:What the subject did as a text, speech or reading and collected for himself concretely, based on the ideas expressed as a knowing subject who conceives and reintegrates himself constantly.

3 - Category Understanding oneself in relation to Discourse

It is the way in which the discourse or the text shows itself as compositions of ethics, respectful of what constitutes man as an individual, as a participant in a society and what it reveals as a result. The text and discourse need to signify the level of commitment to the nature of their species, the particularity as an individual and belonging to a society in which subjects are also constituted by their respective individualities. Each experience resignifies something in the individual and this makes him responsible for improving knowledge in the process of life, because according to Maturana and Varela (1995, p.10), we build the world we live in during our lives and the world also builds us around

along this common journey.

This category leads to a understanding in a peaceful state and demonstrates that the greater the social complexity, the greater the need for solidarity to guarantee the social bond and collective development.

Summary:What is the subject's social contribution with his ideas with which he has achieved something and which allows him to know about, to offer to others in constructive and dialogical discourse.

4 - Category Reorganization of Ideas

The way one lives and the ideas are shown in an integrated phenomenon between the genetic or the biological, as well as the psychic and cultural according to Morin (2008a). Every human expression is the result of the combination of these elements and that same expression must reorganize the ideas that constitute a new look at the same point that was remodeled as a consequence. The subject positions himself, shows himself and the environment participating with solutions, with willingness and responsibility in the construction of knowledge, as he contributes positively in the possible aspects to what is demanded of him.

This category is more evident when the human being is the bearer of a spirit that emerges and develops in a relationship between brain activity, intellectual and culture as principles or bases of existence.

Summary:Concrete evidence for himself with experiences in which he has integrated genetics, as much as the psychic and cultural in the elaboration of the conscience of the conscience.

Summary table of the organizational structure of the research:

The production of transdisciplinary knowledge
<i>Conception of knowledge</i> – knowledge is constructed or conceived in a relationship between the subject and the object, without any priority and fully mediated by the quality of the level of consciousness.
<i>perception of reality</i> – is shown in the partiality of the phenomenon that appears first, then its totality is mixed with several possible and possible relationships to be identified.
<i>the social reality</i> – conceives a synthesis of multiple determinations, is the unity of multiplicity. The verified reality is conceived from the relations between the objective and subjective structures. The human being is considered from the point of view of history, relationships in the world and the material mode of production of the respective existence and of the species.
Research method in the construction of transdisciplinary knowledge
<i>Production method and analysis</i> – is structured by the dialogue between the subject and the object in a single context, is characterized by reflective thinking at the level of consciousness at the time.
<i>Purpose of the method</i> – the subject starts his journey in the research with effort according to the circumstance, to elaborate increasingly subtle abstractions until reaching the simplest characteristics until elaborating the complex relationships. Dedicate yourself to the topic with interest, investigate the experience, reflect, write, be faithful as a subject and consider the observed whole.
<i>Relationship between thought and reality</i> – thought is the starting point that thinks about the object, but then turns to itself with what it thought about the observed object, constituting the dialogic reality.
<i>Relationship between essence and appearance of phenomena</i> – The apparent content corresponds to the essence, the form corresponds to the appearance and both belong to the complex phenomenon in which one does not exist without the other, but have differences in essence.
<i>Relationship between subject and object</i> – the relationship between subject and observed object are different, but have an intrinsic relationship between them that is conditioned by the consciousness that offers and mediates the level of reflections.
<i>Relationship between objectivity and subjectivity</i> – the observed reality is appropriated by the subjectivity of thought, to be criticized as a phenomenon or confronted with data from the level of awareness of reality under analysis.

Transdisciplinary research techniques
<i>Main types of study</i> - historic; socio-historical; critical studies; studies that incorporate science, philosophy, political practice; ethnographic, phenomenological, sociological, archaeological, genealogical, hermeneutic studies.
<i>Main data collection, treatment and analysis techniques</i> – documents, testimonials and observation. Data analysis can be interpretive, qualitative, quantitative or all.
<i>Empirical field demarcation criteria</i> – the empirical level is related to the observed reality that is objectified from ontological, epistemological, methodological and theoretical constructs in the field of dialogic relations.
TRANSDISCIPLINARY RESEARCH CATEGORIES
1 - Integrative Language Category
The world of ideas and thought; how ideas that produce new perceptions are related.
2 - Transdisciplinary Recursive Discourse Category
What the subject did as a text, speech or reading and collected for himself concretely, based on the ideas expressed as a knowing subject who conceives and reintegrates himself constantly.
3 - Category Understanding oneself in relation to Discourse
What is the subject's social contribution with his ideas with which he has achieved something and which allows him to know about, to offer to others in constructive and dialogical discourse.
4 - Category Reorganization of Ideas
Concrete evidence for himself with experiences in which he has integrated genetics, as much as the psychic and cultural in the elaboration of the conscience of the conscience.

Source: the authors

FINAL CONSIDERATIONS

The categories presented here by interpretation or hermeneutic exercise are the result of the process by which the authors themselves made themselves available and make themselves available to other researchers. It is a construction of what was researched, relating the ideas that must always advance in contradictions, with dialogical characteristics that symbolize the reception of what approaches with what distances and that

makes up a totality. It is the result of what it was possible to build as the research's guiding bases, which both qualifies the researcher's development and makes it possible to build systematized knowledge, taking advantage of all the complex relationships that are made in consciousness and unconsciousness. Some can be consciously mapped and others cannot be disregarded, even if they are not clearly shown to the researcher.

The conscience that liberates has a clear notion of incompleteness, according to Freire (2015), which is characteristic of the human being's vital experience. Consciousness is like a body that captures, apprehends, transforms, creates beauty in the domain of life, in a process of spiritualization of the world as beings of an ethical nature and which therefore recognizes its own incompleteness.

The categories of transdisciplinary epistemology form a set of principles that can help in the re-education of human thought, according to Bachelard (1996), whether in the continued formation of oneself or in social contribution with consistent bases. They can also be understood as research questions in which the researcher asks himself and searches for answers oriented towards an organization capable of identifying the level of interaction, being able to follow these same reflections and acquire virtues that this epistemology offers.

Notably, a theory of knowledge is not a model capable of offering answers to all searches, however, it can offer consistent and qualified results for one more way of researching to know, among others. It is up to each researcher to identify the epistemic model that best aligns with their way of seeing the world, however, for those who recognize themselves in transdisciplinarity, the categories presented here coherently support the design of a research with scientific characteristics, offer the researcher a script for the integration of a little more knowledge

about oneself and the researched object. Transdisciplinary thinking stimulates and strengthens the intentional, evolutionary dialogic process without going back to what it was before, since the reform of thought is established in the very construction of research and in consciousness.

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